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ALLEGHENY FOREST EXPERIMENT STATION*

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CHEMICAL WOOD CUTTERS LOSE TIME AND MONEY ON SMALL TREES 2.2

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Small sized trees can earn an attractive profit to the landowner if left in the forest to grow. But if harvested prematurely for chemical wood, they lose money to wood cutters and chemical plants alike. Even more important today when wood chemicals are in great demand by munition and armament manufacturers, wasting labor, tires, trucks, and much needed space in distilling retorts with undersized wood from small trees impedes war production.

These facts were revealed by a special time study made by the U. S. Forest Service in cooperation with the Gray Chemical Company of Roulette, Pennsylvania. The time required to fell, limb, and buck each of 240 trees was determined, and related to their diameter, height, and chemical wood volume. Average splitting time by tree sizes was determined from a separate 50-tree sample. From this the number of trees of various sizes needed to make a cord and the earnings per eight-hour day for woods workers cutting only trees of definite sizes was computed. Earnings are based on a piece rate of $3.00 per cord of unpiled wood because it was impractical to make up piles from trees of a single size only.

The number of trees a wood cutter must fell and buck to make a cord, and his average daily earnings for harvesting trees of various sizes, are shown graphically on the opposite side of this sheet. Cutting minimum sized trees, 4 inches at 4½ feet from the ground or about 5 inches on the stump, the worker must fell 48 trees to make a cord and earns $3.48 per day. Working with 12-inch trees, his earnings more than double, and he needs to cut only 3.4 trees to make a cord. Sixteen-inch trees earn him slightly more than 12-inch ones, but these are usually made up into logs rather than chemical wood.

That cutting all small trees reduces efficiency was further demonstrated on six acres of plots cut to different diameter limits. A man could cut a cord of wood in 5.7 hours if he left all trees below 7 inches in diameter, but required 6.2 hours if he clearcut, or cut only trees 10 inches and larger. To obtain the same number of cords from each dray road, cutting strips must be widened on partially cut areas. A better method is to skid tree lengths to a landing where the poles can be bucked and piled beside a truck road. This eliminates two handlings of each bolt, utilizes more convenient working space, and allows greater specialization in operations. Pole skidding is 20 percent faster than draying for skidding distances of 350 feet or less, but slower than draying for distances greater than about 600 feet.

* In cooperation with the University of Pennsylvania.

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RELATION OF TREE SIZE TO NUMBER OF TREES PER CORD AND DAILY EARNINGS OF CHEMICALWOOD CUTTERS

Allowing $3.00 Per Cord For Felling, Limbing, Bucking, And Splitting